FINAL CLOSE OUT REPORT
STATE MARINE OF PORT ARTHUR SUPERFUND SITE
PORT ARTHUR, JEFFERSON COUNTY, TEXAS
EPA ID# TXD099801102

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CONCURRENCE PAGE
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I. INTRODUCTION

This Final Close Out Report documents that the U. S. Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) have completed all of the cleanup activities for the State Marine of Port Arthur Superfund Site (hereinafter "the Site" or "SMPA Site") in accordance with the EPA's guidance document titled, "Close Out Procedures for National Priorities List Sites" (OSWER Directive 9320.2-09A-P).

II. SUMMARY OF SITE CONDITIONS

Background

The SMPA Site (CERCLIS ID - TXD099801102), a former barge-cleaning operation and municipal landfill, occupied a 17-acre industrial tract of land located approximately 4.5 miles east-northeast of the City of Port Arthur on Old Yacht Club Road on Pleasure Islet. Pleasure Islet is a peninsula located approximately 0.5 miles southwest of the mouth of the Neches River. The Site is bordered by the Palmer Barge Line Superfund Site (hereinafter "the PBL Site") to the north, by Old Yacht Club Road to the west, by undeveloped property to the south, and Sabine Lake to the east.

Pleasure Islet is a manmade landmass consisting of dredge spoils generated during the construction and maintenance of the Sabine-Neches canal, also called the Intercoastal Waterway. The canal was constructed between 1898 and approximately 1920 in the vicinity of Sabine Lake and the Neches River, between the current Site location and the mainland. Between 1955 and 1957, a portion of the canal along the western side of Pleasure Islet was abandoned, and a new canal was cut along the eastern and southern sides of Pleasure Islet. Pleasure Islet was created when a land bridge was constructed across the abandoned portions of the canal, between the northern tip of Pleasure Island and the mainland. Vehicle access to the Site is limited to a single dirt road starting at the western Site border along Old Yacht Club Road.

Ownership of Pleasure Islet was transferred from the State of Texas to the City of Port Arthur, Texas, in 1955. Development of the islet and the Site began after 1957, following construction of the land bridge across the abandoned portions of the Sabine-Neches Canal. In approximately 1963, the City of Port Arthur began municipal landfill operations in the northern and central portions of the islet. Initially, the landfill consisted of a burn pit in which wastes were incinerated. By December 1969, burn operations were discontinued, and the landfill was used solely for disposal of wastes. Between 1969 and 1972, landfill disposal operations

expanded to include the central and northern portions of the Site and the property north of the Site. Between 1972 and 1974, disposal activities were generally concentrated in the northern parts of the islet. In December 1974, the City of Port Arthur closed the landfill in accordance with Texas Department of Health regulations, which required covering the entire landfill with approximately two feet of fine-grained fill material. The cover material is believed to be dredge spoils that originated on the islet. Site operations began about 1973 under the names of State Welding and Marine Works and the Golden Triangle Shipyard. The construction of wastewater impoundments in the northwestern portion of the Site was also reported. The impoundments were reportedly unlined earthen dike areas approximately two acres in size used to store oil and wastewater from barge-cleaning operations. Inspection reports indicate that wastewater from the barge-cleaning operations was directed to two aboveground storage tanks and then pumped to the wastewater impoundments. Some of the oil from the tanks was diverted to an old ship, docked on the land, that was used as an oil/water separator. Oil from the separator was collected for reuse, potentially on the Site. The Site is currently being operated by the owner as an industrial property for metal scrapping activities.

Site History

In 1995, the Texas Natural Resource Conservation Commission (TNRCC), now the TCEQ, initiated an Expanded Site Inspection (ESI) at the Site. The objective of the TNRCC's ESI was to collect sufficient data to develop an understanding of the Site contaminants and to identify the potential migration pathways, primary contaminant sources, exposure pathways, and the presence of potential human health and ecological receptors.

Other investigations adjacent to the Site included a Preliminary Assessment (PA), a Screening Site Inspection (SSI), and an ESI that were conducted immediately adjacent to the Site at the PBL Site. The PBL Site is located on Pleasure Islet immediately north of the Site. These investigations did not involve collecting soil, sediment, or ground water directly from the Site; however, some sediment data obtained from the PBL Site at near-shore and offshore locations were used in the human health and ecological screening risk assessments for the Site.

The EPA determined that the Site warranted further investigation to assess the nature and extent of the human health and environmental risks associated with the Site's previous barge-cleaning and landfill activities. The investigations of the Site included the locations of the former wastewater impoundments, wastewater treatment facility, tar burn area, above ground storage tank area, maintenance shed area, Lauren Refining Company tank farm area, non-source areas of the Site, ground water, and the sediments of Sabine Lake.

The EPA published a proposed rule on March 6, 1998 (63 FR 11340), to add the Site to the National Priorities List (NPL). The Site was added to the NPL in a final rule published on July 28, 1998 (63 FR 40182). The surface water migration pathway was scored as part of the Hazard Ranking System Documentation Record.

History of CERCLA Enforcement Activities

On October 29, 1998, the EPA issue Special Notice Letters to potentially responsible parties (PRP) requiring them to conduct the Remedial Investigation and Feasibility Study (RI/FS). In February 1999, the EPA issued 104(e) Information Request letters to the PRPs regarding the Site. The EPA did not receive positive responses to these letters and began a fund-lead RI/FS.

Removal Actions Performed and Cleanup Activities

In 2001, a Remedial Investigation was conducted at the Site to determine the nature and extent of contamination present at the Site. The EPA completed a Time Critical Removal Action in August 2001 (USACE 2001) to remove source materials stored on-site. Activities included the removal and off-site disposal of waste materials, water treatment, oil/water separation, and stabilization and off-site disposal of sludge materials. This Removal Action addressed the materials that posed a risk to human and ecological receptors.

Twenty-two (22) aboveground storage tanks (ASTs) of varying sizes, several oil pits, 27 drums, and debris materials scattered throughout the Site were identified during the Removal Action. Materials removed and disposed off-site included 26,000 gallons of waste oil, water, diesel fuel, and kerosene; 3,800 gallons of heavy sludge; 27 drums; 28 compressed gas cylinders; and 14 batteries. After disposing of liquids and sludge materials from the ASTs, the tanks were decontaminated utilizing a degreaser solution and a pressure washer. The decontamination rinse water was disposed off-site.

Remedial Investigation and Supplemental Remedial Investigation

In May and June 2006, the EPA conducted a Supplemental Remedial Investigation to determine if the former surface impoundments were a continuing source of contamination to the Sabine Lake sediments by movement through the shallow ground water. The objectives of the Remedial Investigation (RI, Weston 2003) for the Site were to:

- To determine the nature and extent of contamination known or suspected on-site and off-site locations, and
- To assess the potential human health and ecological risks associated with the Site.

The objectives of the Supplemental Remedial Investigation (SRI, CH2M 2006) for the Site were to:

- Collect and analyze sediment samples to determine if contaminants in Sabine Lake sediments posed an unacceptable risk to benthic organisms.

- Collect and analyze subsurface soil samples from the wastewater impoundment area to determine if contaminants in the impoundment soil could serve as a potential source of contamination to the ground water and eventually to benthic organisms in the sediments of Sabine Lake.

- Collect and analyze subsurface soil samples from the wastewater impoundment area to determine if contaminants in the impoundment soil posed an unacceptable risk to future onsite construction workers.

- Install and develop monitoring wells at two of the soil boring locations in the wastewater impoundment area for associated ground water sampling.

- Collect and analyze ground water samples to determine if Site ground water was a current or potentially future source of contamination to benthic organisms in Sabine Lake.

- Store, analyze, and properly dispose of any investigation-derived waste that was produced during field activities in support of the SRI.

The RI scope of work focused on collecting additional information not obtained during previous investigations. The 2001 RI investigation consisted of two sampling events. The first sampling event consisted of collecting sediment samples from off-site locations in Sabine Lake. The second sampling event consisted of collecting soil and ground water samples from on-site locations. The following tasks were completed during the RI:

- Completion of five shallow and six deep borings ranging in depths from 4.0 to 9.0 and 25.0 to 60.0 feet below the ground's surface (bgs), respectively.

- Installation of six ground water monitoring wells.

- Collection of surface soil samples from 87 locations ranging in depth from 0.0 to 6.0 inches bgs.

- Collection of intertidal samples from nine locations ranging in depth from 0.0 to 6.0 inches bgs.

- Collection of sediment samples from 46 locations ranging in depth from 0.0 to 6.0 feet bgs.

The RI analytical results were compared to commercial/industrial protective concentration levels (PCLs) established by the Texas Risk Reduction Program (TRRP), and where appropriate, to background levels for the Site's contaminants of concern (COCs).

The most frequently detected COCs for all sediment samples collected were metals including arsenic, lead, and mercury. For intertidal sediments, six metals (antimony, arsenic, cadmium, lead, mercury, and selenium) and one semi-volatile organic compound (SVOC, pentachlorophenol) exceeded their respective PCLs, the default cleanup standards under TRRP. Constituents that exceeded PCLs for nearshore sediments included six metals (arsenic, barium, beryllium, cadmium, lead, and mercury) and one SVOC (3,3 dichlorobenzidine). Only arsenic, lead, and mercury exceeded PCLs for off-shore sediments.

The most frequently detected COCs for soils were metals including antimony, arsenic, barium, lead, mercury, and silver. These metals consistently exceeded the ^{Gw}Soil PCL (Exposure pathway: i.e., the soil-to-ground water leaching of COCs to ground water). Based on the distribution of these constituents, their occurrence is most likely a result of the former incineration and landfill operations. In general, the metals were widely distributed across the Site and not limited to the Site's source areas.

Isolated detections of the SVOCs (benzo[a]pyrene, benzo[a]anthracene, benzo[a]fluoranthene, and pentachlorophenol) were reported at relatively low concentrations for on-site soils. Because the SVOC exceedances were only detected at isolated locations, impact from operations on the Site appeared minimal.

Nine constituents including eight metals (antimony, arsenic, barium, beryllium, lead, manganese, silver, and thallium) and one SVOC (pentachlorophenol) exceeded ^{Gw}Soil$_{Ing}$ PCLs (Exposure pathway: soil-to-ground water leaching COCs to ground water). Based on a preliminary comparison of ground water analytical results to Class 3 ground water criteria, no constituents exceeded Class 3 ground water PCLs and it is unrealistic to assume any beneficial use of the shallow ground water. The State of Texas defines ground water resources based on water quality and sustainable well yield. A Class 3 ground water-bearing unit is not capable of producing greater than a 150 gallon/day ground water flow with a Total Dissolved Solids content less than 10,000 milligrams/liter.

The SRI included an investigation of the former wastewater impoundments to determine if waste materials were still present that could be a source of contamination to the Sabine Lake sediments. Soil samples were analyzed for metals and SVOCs. The SRI also included the installation of ground water monitoring wells downgradient of the former wastewater impoundments and the collection of sediments samples from Sabine Lake. These samples were also analyzed for metals and SVOCs.

The screening level ecological risk assessment indicated that selenium concentrations in the Site sediments from the SRI may pose a risk to benthic invertebrates; however, the selenium concentrations are within one order of magnitude of the primary effects screening level. Furthermore, results from the soils and ground water data do not indicate that a selenium pathway exists from the Site to the sediments as the potential source of selenium contamination. Therefore, the EPA has determined that no Remedial Action is warranted for the Site soils to prevent contamination of the Site sediments. Based on selenium concentrations in the sediments, no Remedial Action is warranted for the Site sediments to protect ecological receptors.

Record of Decision Findings

The EPA's Record of Decision (ROD, EPA 2007) was signed on April 27, 2007. Based on the results of the Baseline Human Health Risk Assessment (BHHRA, CH2M 2005b), Screening Level Ecological Risk Assessment (SLERA, CH2M 2005c), and the EPA's Time Critical Removal Action, the EPA's Selected Remedy identified in the ROD for the SMPA Site was "No Further Action is Necessary." An institutional control (IC), in the form of a Restrictive Covenant, was selected to ensure that the current and future use of the Site remains for industrial or commercial purposes. The "No Further Action is Necessary" remedy is based on an industrial/commercial land use scenario.

The Remedial Action Objectives (RAOs) achieved by the Selected Remedy for the Site were based on the future redevelopment of the Site for industrial/commercial land use and protecting future industrial/construction workers and ecological receptors. The RAOs for the Site were:

- Prevent exposure to contaminated soil/sediment via ingestion, inhalation, or dermal contact that would result in an excess carcinogenic risk of 1.0×10^{-5} or a Hazard Index of 1.0.
- Prevent exposure of contaminated soil/sediment to aquatic or terrestrial organisms via direct contact or indirect ingestion of bioaccumulative chemicals that would result in a Hazard Quotient of 1.0.
- Prevent or minimize migration of soil contaminants to ground water.
- Prevent or minimize further migration of soil and sediment contaminants to surface water that could result in exceedance of ambient water quality criteria.

The EPA has obtained an IC (*i.e.*, Restrictive Covenant) from the landowner, which was filed on March 25, 2011, in the appropriate property records for the Site, indicating that the future use of the property is restricted to commercial/industrial purposes.

III. MONITORING RESULTS

The cleanup goals, accomplished by the 2001 Time Critical Removal Action, included the removal, treatment, and off-site disposal of the liquids and sludges in the ASTs and drums. This Removal Action addressed the materials that posed a risk to human and ecological receptors.

There were no cleanup goals selected in the "No Further Action is Necessary" ROD. Based on the results of the BHHRA, SLERA, and the EPA's Time Critical Removal Action, the EPA's Selected Remedy identified in the ROD for the SMPA Site of "No Further Action is Necessary" is protective of human health and the environment.

IV. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL

The U.S. Corps of Engineers (USACE), through the EPA's removal program, implemented the Removal Action for the Site. Roy F. Weston, USACE's contractor, conducted the field construction activities at the Site.

The EPA's On-Scene Coordinator and USACE conducted field oversight throughout the Removal Action activities to ensure that the Removal Action met quality assurance and quality control guidelines consistent with the Action Memorandum for the Site's Removal Action.

V. FIVE-YEAR REVIEWS

Since remaining conditions at the Site will not allow for unlimited use and unrestricted exposure, a Five-Year Review (FYR) must be conducted no less than every five years from signing the "No Further Action" ROD to ensure that the remedy is, or will continue to be, protective of human health and the environment. The effectiveness of the recorded IC will be part of the FYR to ensure that future Site development is consistent with the industrial cleanup standards for which the remedy is based and that conditions remain protective of human health and the environment. As part of the FYR, sediment sampling and monitoring will be considered in Sabine Lake adjacent to the Site to ensure that the remedy remains protective of ecological receptors. The EPA will conduct the first statutory FYR before April 2012.

VI. SITE COMPLETION CRITERIA

Based on the results of EPA's Time Critical Removal Action, BHHRA and SLERA, the EPA selected a "No Further Action" ROD with institutional controls. The implemented restrictive covenant ensures future land use will remain commercial/industrial. Therefore, no further Superfund response is needed to protect human health and the environment.

Pamela Phillips, Acting 6/29/11

Samuel Coleman, P.E., Director
Superfund Division

Date

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